

We claim:

1. A method for reducing device discovery delays in frequency hopping based ad-hoc networks, said method including the steps of:

5 periodically interrupting an activity being executed by a device to scan, for a pre-determined time period, for inquiry messages from other devices;

returning to continue said activity for a random time period on receipt of an inquiry message from another device and, upon expiry of said random time period, processing said inquiry message in accordance with normal procedures applicable to the particular frequency

10 hopping based ad-hoc network; and

returning to continue said activity on expiry of said pre-determined time period.

2. The method of claim 1, wherein said pre-determined time period for scanning is reduced by the reception, by said device, of a pre-determined number of inquiry messages from other  
15 devices.

3. The method of claim 1, wherein said interrupted activity is one of device discovery.

4. The method of claim 1, wherein said frequency hopping based ad-hoc network is  
20 implemented under the Bluetooth™ defacto standard.

5. The method of claim 4, wherein said interrupted activity is one of device discovery.

6. The method of claim 4, wherein said periodic interruption of an activity occurs at least  
25 once every 2.56 seconds.

7. The method of claim 6, wherein said random time period to continue said interrupted activity, before processing said inquiry message received from another device, is constrained to be less than or equal to 1.28 seconds.

5 8. A device for use in frequency hopping based ad-hoc networks including:

means for periodically interrupting an activity being executed by said device to scan, for a pre-determined time period, for inquiry messages from other devices;

means for returning to continue said activity for a random time period on receipt of an inquiry message from another device and, upon expiry of said random time period, for processing  
10 said inquiry message in accordance with normal procedures applicable to the particular frequency hopping based ad-hoc network; and

means for returning to continue said activity on expiry of said pre-determined time period.

15 9. The device of claim 8, wherein said pre-determined time period for scanning is reduced by the reception, by said device, of a pre-determined number of inquiry messages from other devices.

10. The device of claim 8, wherein said interrupted activity is one of device discovery.

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11. The device of claim 8, wherein said frequency hopping based ad-hoc network is implemented under the Bluetooth<sup>TM</sup> defacto standard.

12. The device of claim 11, wherein said interrupted activity is one of device discovery.

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13. The device of claim 11, wherein said periodic interruption of an activity occurs at least once every 2.56 seconds.

14. The device of claim 13, wherein said random time period to continue said interrupted activity, before processing said inquiry message received from another device, is constrained to be less than or equal to 1.28 seconds.

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15. A computer program product incorporating a computer readable medium having a computer program recorded therein for use in devices for frequency hopping based ad-hoc networks, said computer program product including:

computer program code means for periodically interrupting an activity being executed by said device to scan, for a pre-determined time period, for inquiry messages from other devices;

computer program code means for returning to continue said activity for a random time period on receipt of an inquiry message from another device and, upon expiry of said random time period, for processing said inquiry message in accordance with normal procedures applicable to the particular frequency hopping based ad-hoc network; and

computer program code means for returning to continue said activity on expiry of said pre-determined time period.

16. The computer program product of claim 15, wherein said pre-determined time period for scanning is reduced by the reception, by said device, of a pre-determined number of inquiry messages from other devices.

17. The computer program product of claim 15, wherein said interrupted activity is one of device discovery.

18. The computer program product of claim 15, wherein said frequency hopping based ad-hoc network is implemented under the Bluetooth™ defacto standard.

19. The computer program product of claim 18, wherein said interrupted activity is one of device discovery.

20. The computer program product of claim 18, wherein said periodic interruption of an  
5 activity occurs at least once every 2.56 seconds.

21. The computer program product of claim 20, wherein said random time period to continue said interrupted activity, before processing said inquiry message received from another device, is constrained to be less than or equal to 1.28 seconds.

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